REMARKS

Statement of Substance of Interview

As an initial matter, counsel would like to thank the Examiner for the courtesies extended during the personal interview conducted May 21, 2008.

The Interview Summary mailed May 22, 2008 provides an accurate summary and statement of the substance of the interview with the Examiner, except that as to **Jolly**, it is stated in the Interview Summary that Jolly teaches benzophenones which are embraced by formula (1) of the claims. However, the Examiner on further consideration stated at the interview that benzophenones are not embraced by formula (1) of the claims, because n and m are not zero at the same time in formula (1).

Response to the Office Action Dated January 14, 2008

In the present Amendment, claims 1, 3 and 5 have been amended to incorporate the subject matters of claims 9, 11 and 13, respectively. Claims 9, 11 and 13 have been cancelled, accordingly. Claims 10, 12 and 14 have been amended to correct their dependencies.

In addition, claim 1 has been amended to recite "a first step of irradiating light on a composition comprising a free radical polymerizable compound capable of a two-photon absorption to form only a latent image; and a second step of exciting the latent image by an application of heat to cause a polymerization." Claim 2 has been amended to correspond to claim 1, but to recite "a cationic or anionic polymerization compound" and a second step of "exciting the latent image to cause a polymerization."

Claims 3 and 6 have been amended to recite "a cationic or anionic polymerization compound."

Claims 15 and 20 have been amended to improve their form.

New claim 27 has been added. Claim 27 corresponds to claim 10, but depends from claim 2.

No new matter has been added, and entry of the Amendment is respectfully requested.

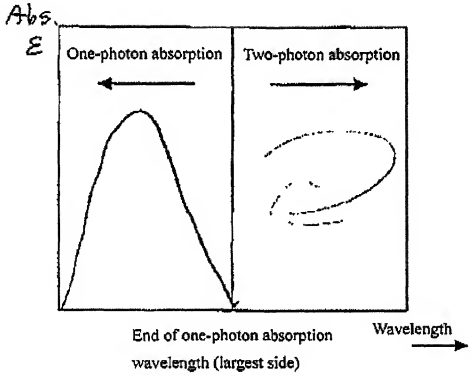
Upon entry of the Amendment, claims 1-8, 10, 12, 14-21 and 24-27 will be pending.

In paragraph No. 4 of the Action, claims 5, 13, 14 and 17-24 [sic, 17-21 and 24] are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Smothers (U.S. 4,917,977).

Applicant submits that this rejection should be withdrawn because Smothers does not disclose or render obvious the present invention.

Smothers does not relate to two-photon absorption, and does not disclose a polymerization with light having a wavelength beyond (i.e., longer than) the longest wavelength of the one-photon absorption.

In contrast, in the present invention, the absorption occurs with a light having a wavelength longer than the longest wavelength of the one-photon absorption as recited in claim 5.



In view of the above, reconsideration and withdrawal of the § 102(b) rejection of claims 5, 13, 14, 17-21 and 24 based on Smothers are respectfully requested.

In paragraph No. 5 of the Action, claims 19-21 and 24-26 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Akiba et al, JP 2003-073410.

Applicant submits that this rejection should be withdrawn because Akiba et al does not disclose or render obvious the present invention.

The recording method of the present invention has a feature of performing a modulation of refractive index by diffusion and polymerization of a monomer (a polymerizable compound) and a binder, which have a different refractive index from each other. Akiba et al does not teach or suggest such a feature.

In view of the above, reconsideration and withdrawal of the § 102(b) rejection of claims 19-21 and 24-26 based on Akiba et al are respectfully requested.

In paragraph No. 6 of the Action, claims 1-2, 5, 9, 10, 13, 14 and 17-26 [sic, 17-21 and 24-26] are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Smothers, in view of Diamond et al, "Two-photon holography in 3-D photopolymer host-guest matrix," Optics Express, Vol. 6(3) pp. 64-68 (01/2000) and Akiba et al.

Applicant submits that this rejection should be withdrawn because Smothers, Diamond et al and Akiba et al do not disclose or render obvious the present invention, either alone or in combination.

Smothers discloses a single step process for forming a light-stable hologram using a disclosed photosensitive composition (Abstract). Diamond et al disclose "one-step in-situ two-photon holography at an arbitrary point within a gel cube containing photopolymers, which involves a photopolymerization reaction initiated by a highly efficient two-photon fluorophore (last paragraph at page 68)." Neither Smothers nor Diamond et al discloses a two-photon absorbing polymerization method comprising "a first step of irradiating light on a composition comprising a free radical (or cationic or anionic) polymerizable compound capable of a two-photon absorption to form only a latent image; and a second step of exciting the latent image (either by heat or by irradiation) to cause a polymerization" as recited in the present claim 1 or 2. Akiba et al do not make up for the deficiencies of Smothers and Diamond et al.

Further, as discussed above, Smothers does not teach or suggest a two-photon absorbing compound, which is required in a step of producing a latent image in the present invention.

Smothers does not disclose or suggest a polymerization with light having a wavelength beyond (i.e., longer than) the longest wavelength of the one-photon absorption. Diamond et al and Akiba et al do not make up for the deficiencies of Smothers.

Accordingly, the present claims are not obvious over Smothers in view of Diamond et al and Akiba et al. Reconsideration and withdrawal of the § 103(a) rejection of claims 1-2, 5, 9, 10, 13, 14, 17-21 and 24-26 based on Smothers in view of Diamond and Akiba et al are respectfully requested.

In paragraph No. 7 of the Action, claims 1-2, 5 and 17-18 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lipson et al (U.S. 6,512,606), in view of Megens et al (U.S. 2003/0129501), and Belfield et al "Near-IR two photon absorbing dyes and photoinitiated cationic polymerization", Polymer Preprints, Vol. 41(1) pp. 578-579 (03/2000).

Applicant submits that this rejection should be withdrawn because Lipson et al, Megens et al and Belfield et al do not disclose or render obvious the present invention, either alone or in combination.

As noted, claims 1 and 5 have been amended to incorporate the subject matters of claims 9 and 13, respectively. Claims 9 and 13 are not subject to this rejection. Accordingly, reconsideration and withdrawal of the § 103(a) rejection of claims 1-2, 5, and 17-18 based on Lipson et al, in view of Megens et al and Belfield et al, are respectfully requested.

In paragraph No. 8 of the Action, claims 1-2, 5, 9, 10, 13, 14 and 17-26 [sic, 17-21 and 24-26] are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Akiba et al, in view of Megens et al, and Belfield et al and Lipson et al.

Applicant submits that this rejection should be withdrawn because Akiba et al, Megens et al, Belfield et al and Lipson et al do not disclose or render obvious the present invention, either alone or in combination.

Lipson employs a two-photon absorption by the PAG but does not disclose the compounds of the present invention represented by formulae (1) and (3) to (5). Therefore, the present claims are not obvious over the cited art.

In view of the above, reconsideration and withdrawal of the § 103(a) rejection of claims 1-2, 5, 9, 10, 13, 14, 17-21 and 24-26 based on Akiba et al, in view of Megens et al, Belfield et al and Lipson et al are respectfully requested.

In paragraph No. 9 of the Action, claims 5 and 18 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Lungu (U.S. 2006/0160025).

In paragraph No. 10 of the Action, claims 5 and 18 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Wada, JP 61-183644.

In paragraph No. 11 of the Action, claims 5 and 18 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Arakai et al, JP 59-178448.

In paragraph No. 12 of the Action, claims 5 and 18 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Fujikawa et al, U.S. 5,698,373.

In paragraph No. 13 of the Action, claims 5 and 18 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Jolly et al, WO 80/01846.

In paragraph No. 14 of the Action, claims 5 and 17-18 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fleming et al, WO 01/96961.

Applicant submits that the above six (6) rejections should be withdrawn because claim 5 has been amended to incorporate the subject matter of claim 13. Claim 13 is not subject to any of these rejections.

In paragraph No. 15 of the Action, claims 1-8 and 15-18 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fleming et al, in view of DeVoe et al (WO 01/96917), Arakai et al and JP 74-015490.

As noted, claims 1, 3 and 5 have been amended to incorporate the subject matters of claims 9, 11 and 13, respectively. Claims 9, 11 and 13 are not subject to this rejection. Accordingly, reconsideration and withdrawal of the § 103(a) rejection of claims 1-8 and 15-18 based on Fleming et al, in view of DeVoe et al, Arakai et al and JP '490 are respectfully requested.

In paragraph No. 16 of the Action, claims 1-21 and 24-26 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fleming et al, in view of DeVoe et al, Arakai et al and JP '490, further in view of Akiba et al.

Applicant submits that this rejection should be withdrawn because Fleming et al, DeVoe et al, Arakai et al, JP '490 and Akiba et al do not disclose or render obvious the present invention, either alone or in combination.

The present invention is not obvious over the cited art at least because the present invention has a two-photon recording sensitivity much larger than Fleming and the structure of the two-photon absorbing compounds of the invention is novel over the cited art.

Accordingly, reconsideration and withdrawal of the § 103(a) rejection of claims 1-21 and 24-26 based on Fleming et al, in view of DeVoe et al, Arakai et al and JP '490, and further in view of Akiba et al, are respectfully requested.

The Examiner sets forth six provisional obviousness-type double patenting rejections as follows:

In paragraph No. 18 of the Action, claims 1-21 and 24-26 are provisionally rejected for obviousness-type double patenting as allegedly being unpatentable over claims 1-20 of co-pending application 11/510,656 (US 2007/0048666).

In paragraph No. 19 of the Action, claims 1-21 and 24-26 are provisionally rejected for obviousness-type double patenting as allegedly being unpatentable over claims 1-40 of co-pending application 10/874,344 (US 2005/0003133).

In paragraph No. 20 of the Action, claims 1-21 and 24-26 are provisionally rejected for obviousness-type double patenting as allegedly being unpatentable over claims 1 and 3-19 of co-pending application 10/925,086 (US 2005/0058910).

In paragraph No. 22 of the Action, claims 1-21 and 24-26 are provisionally rejected for obviousness-type double patenting as allegedly being unpatentable over claims 1-29 of co-pending application 11/360,439 (US 2006/0194122).

In paragraph No. 23 of the Action, claims 1-21 and 24-26 are provisionally rejected for obviousness-type double patenting as allegedly being unpatentable over claims 1-21 of co-pending application 11/509,563 (US 2007/0047038).

In paragraph No. 24 of the Action, claims 1-21 and 24-26 are provisionally rejected for obviousness-type double patenting as allegedly being unpatentable over claims 1-23 of co-pending application 11/359,566 (US 2006/0188790).

Since each of the above double patenting rejections is provisional, Applicant will defer responding at the present time.

In paragraph No. 21 of the Action, claims 1-21 and 24-26 are rejected for obviousness-type double patenting as allegedly being unpatentable over claims 1 and 5-18 [sic., claims 1-15] of U.S. Patent No. 7,112,616.

Applicant submits that this double patenting rejection should be withdrawn because the present claims are not obvious over claims 1-15 of '616 patent.

The '616 patent does not disclose (i) a difference in refractive index between a monomer and a binder, or (ii) a formation of a latent image and a polymerization after it. The present claims 1-18 are different from the '616 patent in both (i) and (ii). The present claims 19-21 and 24-26 are different from the '616 patent in (i).

Allowance is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

Hui Chen Wauters

Hui C. Wauters
Registration No. 57,426

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON DC SUGHRUE/265550

65565
CUSTOMER NUMBER

Date: July 14, 2008